



Distributed Energy

Regulatory Education and Outreach

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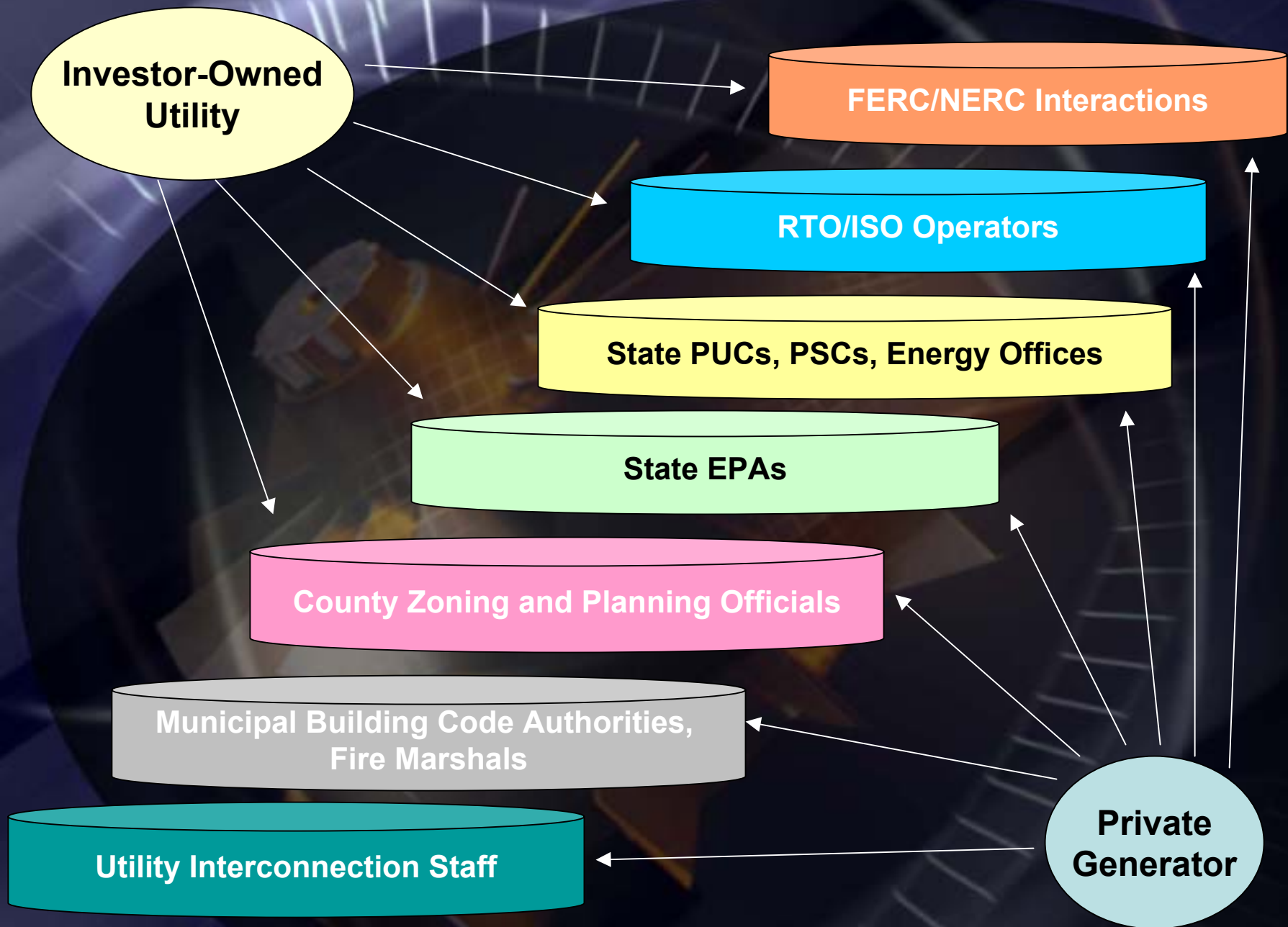
U.S. Department of Energy

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Office of Distributed Energy & Electric Reliability

- Microturbines, reciprocating engine generator sets, fuel cells, thermally-activated technologies
- Materials, energy storage, power electronics
- Equipment, bldg. and electrical interconnect stds.
- Communications and control
- Combined heat and power (CHP), “power parks



DE Codes & Standards

U.S. DOE Program Support

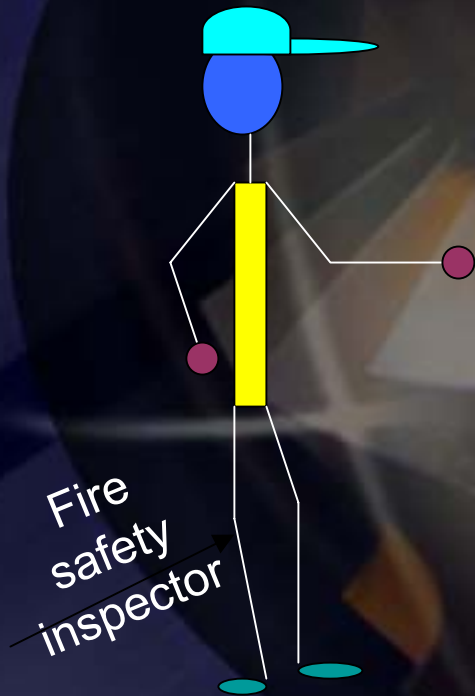
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U.S. Standards and Codes Overview



Actual fuel cell permitting experience

“Am I on
camera?.... Is this
one of those
hidden camera
shows?”



Heat

What is it?

Electricity

Can this blow
up?

Heat

What's hydrogen?



September 11, 2001

- **12 million sq. ft. office space**
- **200 MW (peak) electrical demand**
- **2 distribution substations**

energy infrastructure “reconfigured” weeks/months



September 11, 2001

- **\$10 billion telecom equipment**
- **50% NY City cellular traffic**
- **Majority of mid-Atlantic web content**

IT network self-configured in 30 seconds

**Demand Elasticity
To Price**

**Market
Restructuring**

**Traditionally
Regulated
Business**

**In securable
Delivery
System**

**Intelligence/Capacity
On Customer Side
of Meter**

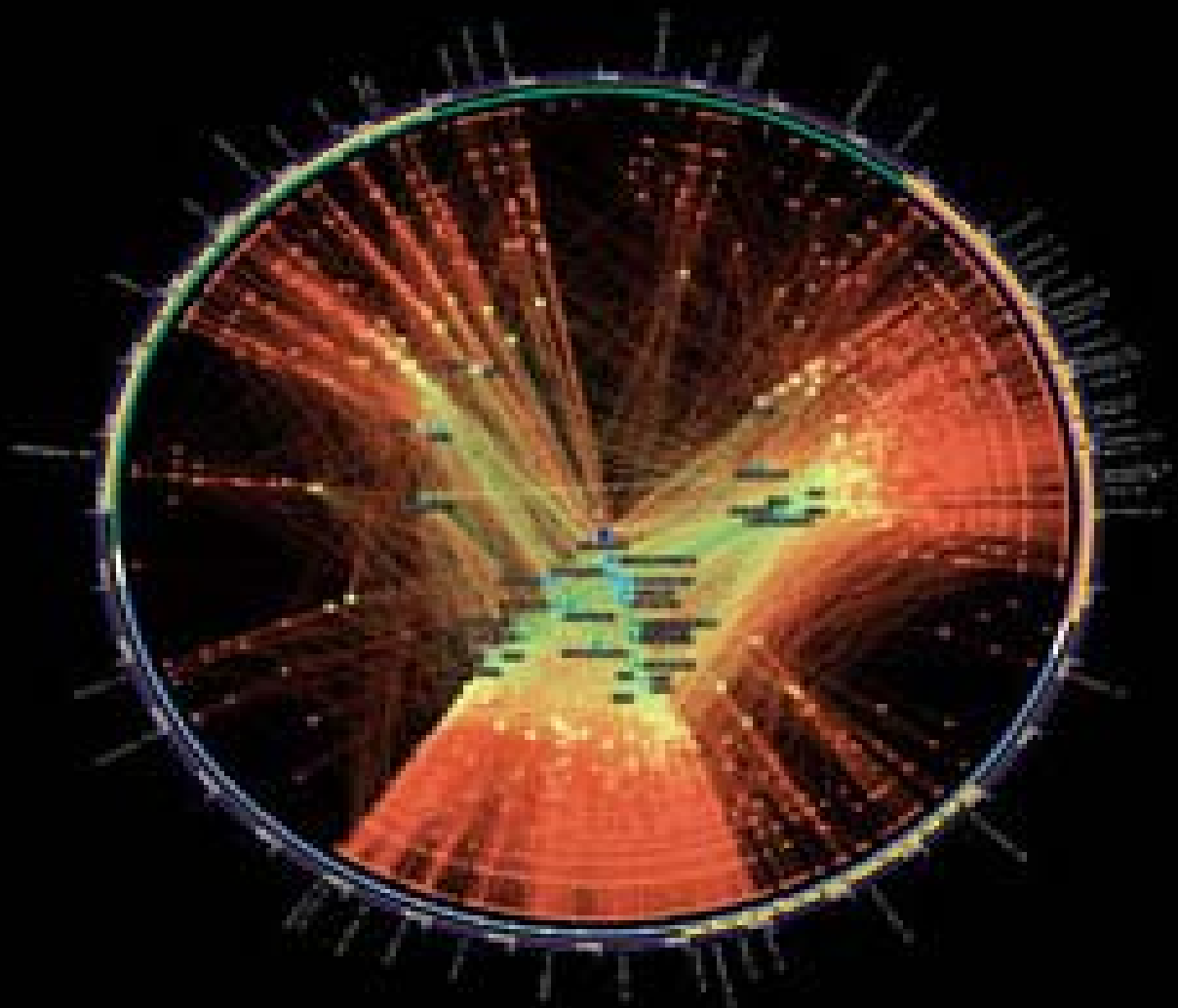
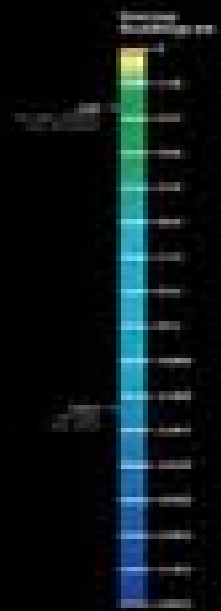
**Automated "Packet-
Switched"
Routing (telecom) in
T&D**

**Event Recovery/
"Self-configuring
Networks"**

**Market/Value
Choice**

**Domestic
Security**

1. **Introduction**
 2. **Methodology**
 3. **Results**
 4. **Discussion**
 5. **Conclusion**



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